

SSVEO IFA List

Date:02/27/2003

STS - 101, OV - 104, Atlantis (21)

Time:03:54:PM

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 3	MET: 000:15:38:14	Problem	FIAR	IFA STS-101-V-01
PROP-02	GMT: 141:01:49:24		SPR	UA
			IPR 106V-0005	PR LP03-26-0679
				Manager:
				Engineer: Steve Arrieta
				281-853-1554

Title: LOME Bipropellant Valve 2 Indicates Open (ORB)

Summary: Following the NC2 burn at 141:01:49:24 G.m.t. (000:15:38:14 MET), the LOME bipropellant valve 2 (BPV-2) continued to indicate open. The valve position remained at 98.4% and should be 0 +/- 5%. The first 2 burns were nominal with 98.7% open, 0.6 second opening period, and 0.4 second closing period for OMS assist and with 98.9% open, 0.4-second opening period, and 0.4 second closing period for OMS-2. This was the first flight of OME s/n 111 since its rebuild at WSTF in 1997. Per the Flight Rules, the engine was not used until the de-orbit burn, where it performed nominally. The BPV-2 open indication (LVDT-2 at 98.4%) remained "open" throughout the burn and continued to indicate "open" after shutdown. Chamber pressure, injector temperatures, and inlet pressures indicated nominal engine performance throughout the burn and LVDT-1 indicated nominal BPV-1 closure.

KSC completed troubleshooting on 6/11/00. The cavity drain was performed and no leakage occurred during the ball valve pressurization which confirmed a LVDT failure. The LVDT replacement will be accomplished by WSTF personnel. At the PRCB (6/8/00), this IFA was made a constraint to STS-106. An action was given to SSVEO to present the troubleshooting findings and rationale for flight to the PRCB. .

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 4	MET: 000:00:03:15	Problem	FIAR	IFA STS-101-V-02
PROP-01	GMT: 140:10:14:25		SPR	UA
			IPR 106V-0007	PR LP03-26-0680
				Manager:
				Engineer: Steve Arrieta

Title: LOME GN2 Regulator Pressure Low During Post-Burn Purges (ORB)

Summary: During the OMS assist start transient and post-dump purge and the OMS 2 post-burn purge, the LOME GN2 regulator pressure indicated 296, 295 and 297 psia respectively, which are below the FDA limit of 299 psia. As a result, FDA alarms were generated. Upon completion of the start transients and purges, the regulated pressure returned quickly to a nominal value of 312 psia. There was no mission impact.

During post-flight safing operations at KSC, the OMS engine GN2 vent was performed at 150:08:43 GMT. Regulator performance was nominal with the pressure indicating 316 psia with a bit toggle to 315 psia. Due to in-flight concerns, the PRT decided to have KSC remove and replace the regulator prior to next flight (in-place R&R will not require engine R&R)

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 12	MET: 005:23:21	Problem	FIAR	IFA STS-101-V-03
INCO-06	GMT: 146:09:32		SPR	UA
			IPR	PR
				Manager:
				Engineer: Marty O'Hare
				281-853-1592

Title: Ku-band Radiating Within the RF Protect Box (FSW)

Summary: While the Orbiter was docked to the ISS, on two occasions the Ku-band traveling wave tube (TWT) radiated into the RF protect box. The first occurred at 146:09:32 G.m.t. (005:23:21 MET) and the second occurred at 147:08:26 G.m.t. (006:22:15 MET). On each occasion, the duration was approximately 1 to 2 seconds. The radiation took place when the antenna was driving from the TDRS East satellite to the TDRS West satellite. In order to prevent future occurrences, the ground turned the transmitter off if the TDRS was predicted to be within the box at TDRS AOS. The cause of these occurrences is being investigated.

An action team was formed that includes USA, BRSS, FSW, and MOD Flight Controllers. Several action were assigned to various groups.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 6	MET: 000:13:51	Problem	FIAR	IFA STS-101-V-04
EGIL-02	GMT: 141:00:02		SPR	UA
			IPR 106V-0010	PR
				Manager:

Engineer: Ken Adams
281-853-1550

Title: PRSD O2 Tank 4 A Heater Temporarily Failed (ORB)

Summary: During the flight day 2 post sleep cryo reconfiguration, the O2 tank 4 A and B heaters were placed in auto. Following the first heater cycle at 141:00:02 G.m.t. (000:13:51 MET), which was nominal, the A heater did not come on during subsequent cycles. The heater switch was cycled to the off position and then back to auto at 141:02:22 G.m.t. (000:16:11 MET). At 141:02:25 G.m.t. (000:16:14 MET), both the A and B heaters cycled, and the functionality of the heater was regained.

The heater performed nominally for the remainder of the mission with several switch throws, and was used to deplete the tank to residual quantity. KSC performed troubleshooting on 6/2/00. The data is being evaluated. No problems were noted with the BOB at the cryo control box. Panel A15 removal is possible for a switch R&R

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 22	MET: 009:19:40:00 GMT: 150:05:51:10	Problem	FIAR SPR IPR 106V-0018	IFA STS-101-V-05 UA PR COM-4-22-0300
				Manager: Engineer: Lance Borden 281-853-1558

Title: Collin TACAN BITE Faults (ORB)

Summary: The Collins TACAN in position 3 experienced 2 BITE faults during landing. The two BITE faults lasted for 3 seconds and for 10 seconds. This BITE signature is the first occurrence for a Collins TACAN. Once the TACAN locked onto the ground station the TACANs performance was nominal. Data retrieval has determine that the event occurred during Plasma and what role this might have played in the event is being investigated. The PRT met Monday June 5th and determined that a R&R was required. The hardware was removed and returned to the vendor where troubleshooting will be performed. The installation of the Collins replacement unit was completed on 6/8/00. OV-104 must fly all Collins TACAN due to the cooling mod which was performed during OMDP.

<u>Tracking No</u>	<u>Time</u>	<u>Classification</u>	<u>Documentation</u>	<u>Subsystem</u>
MER - 23	MET: Post-landing GMT: Post-landing	Problem	FIAR SPR IPR	IFA STS-101-V-06 UA PR TES-4-22-0334
				Manager: Karrie Hinkle 714-372-5206

Engineer:

Title: Slump Tile at the Wing Leading Edge with Internal Flow (ORB)

Summary: During the TPS inspection, tile VO70-199712-051 was discovered slumped with a 0.262 inch gap to RCC T-seal. The indications were found that flow did exist. The lower LESS Panel #6 and upper LESS Panels #'s 6 & 7 were removed to gain access. The "Butterfly" gap filler at the Lower LESS Panel 6/7 interface was not installed correctly. The aft portion that interfaces the LESS #7 panel, the T-Seal and RCC Panel #7 was folded up and pushed away from the intended cavity it was suppose to fill. This configuration created a substantial flow path. The only seal came from the Horse collar gap filler to the edge of the T-Seal. Inspections of the RCC, Insulators and attaching hardware shows various signs of overheating. The insulator between RCC panel #7 and the T-Seal appears to have had the outer inconel cover breached on the lower corner (approx. 1/4" dia.). The RCC doesn't show any obvious signs of overheating e.g. flaking or burnt areas, but further inspections will be required. The fittings show a lot of outgassing deposits and some evidence that they saw some elevated heating. The fittings do not exhibit any signs of melting or distortion. The RCC panels have been removed and more detailed inspections of this hardware are being performed.

At the PRCB (6/8/00), this IFA was made a constraint to STS-106. An action was given to SSVEO to present the troubleshooting findings and rationale for flight to the PRCB.
